

WHAT IS CLAIMED IS:

1. A mail collection point-of-use comprising:

a mail drop unit comprising an opening for receiving customer-deposited mail;

an enclosure coupled to the mail drop unit, the enclosure comprising an opening and a door sealing the opening when the door is closed;

a mail receptacle positioned inside the enclosure, the mail receptacle accumulating received customer-deposited mail, the receptacle and the opening of the enclosure sized to permit removal of the receptacle from the enclosure through the opening;

a detector positioned inside the enclosure and generating a detection signal upon detection of airborne hazardous material; and

an indicator positioned outside the enclosure, coupled to the detector, and generating an indication upon receipt of the detection signal.

2. A mail collection point-of-use, at least partially positioned in a first wall separating a customer-accessible area from a non-customer-accessible work area, the mail collection point-of-use comprising:

a mail drop unit having an opening for receiving customer-deposited mail;

an enclosure on the non customer-accessible work area side of the wall, the enclosure being sealingly coupled to the mail drop unit and

sealed off from the work area, the enclosure comprising an opening and a door sealing the opening when the door is closed;

a mail receptacle positioned inside the enclosure, the mail receptacle accumulating received customer-deposited mail, the receptacle and the opening of the enclosure sized to permit removal of the receptacle from the enclosure through the opening;

a detector positioned inside the enclosure and generating a detection signal upon detection of airborne hazardous material; and

an indicator positioned outside the enclosure, coupled to the detector, and generating an indication upon receipt of the detection.

3. The mail collection point-of-use of claim 2, wherein the enclosure is hermetically coupled to the mail drop unit, hermetically sealed off from the work area, and

wherein the door hermetically seals the opening of the enclosure when the door is closed.

4. The mail collection point-of-use of claim 2, wherein the mail drop unit comprises top, side, and bottom walls corresponding in size and shape to the surrounding surfaces of the first wall, and means for guiding received mail to the mail receptacle.

5. The mail collection point-of-use of claim 2, wherein the mail drop unit comprises top, side, and bottom walls, and a guide facilitating transport of received mail to the mail receptacle.

6. The mail collection point-of-use of claim 2, wherein the indicator is positioned outside of the enclosure within the non-customer-accessible work area.

7. The mail collection point-of-use of claim 2, wherein the indicator is positioned on an outside surface of the enclosure.

8. The mail collection point-of-use of claim 2 comprising:

means for increasing the rate at which any airborne hazardous material within the mail receptacle reaches the detector; and

means coupled to the detector for selectively deactivating the rate-increasing means.

9. The mail collection point-of-use of claim 8, wherein the rate increasing means comprises a duct through which to suck air from the mail receptacle.

10. The mail collection point-of-use of claim 2 comprising:

a fan sucking and directing air from the mail receptacle;

means coupled to the detector for selectively deactivating the fan.

11. The mail collection point-of-use of claim 2, wherein the indicator comprises at least one lamp for generating visible light upon receipt of the detection signal.

12. The mail collection point-of-use of claim 2, wherein the indicator comprises an audio emitter generating sound upon receipt of the detection signal.

13. The mail collection point-of-use of claim 2, wherein the enclosure comprises a front, top, back, and two side walls, and the door is positioned on one of the side or back walls.

14. The mail collection point-of-use of claim 2 comprising a first flange extending from the enclosure and abutting the wall for securing the enclosure to the wall.

15. The mail collection point-of-use of claim 2, wherein the mail receptacle comprises a rigid, constant-volume container comprising a bottom and four side walls.

16. The mail collection point-of-use of claim 2 comprising:

means for maintaining the top of the mail receptacle in an open position and at a fixed distance below the opening of the mail drop unit, wherein the mail receptacle comprises an expandable and collapsible container.

17. The mail collection point-of-use of claim 2 comprising:

a first positioning structure maintaining the top of the mail receptacle in an open position and at a fixed distance below the opening of the mail drop unit, wherein the mail receptacle comprises an expandable and collapsible container.

18. The mail collection point-of-use of claim 2:

wherein the mail receptacle comprises an expandable and collapsible container comprising grommets; and

comprising

a plurality of brackets; and

hooks coupled to at least one of the brackets and engaging at least one of the grommets.

19. A mail collection point-of-use, at least partially positioned in a first wall separating a customer accessible area from a non-customer-accessible work area, the mail collection point-of-use comprising:

a mail drop unit comprising an opening for receiving customer-deposited mail;

a mail receptacle for accumulating received customer-deposited mail; the mail receptacle comprising an expandable and collapsible container;

a first positioning structure maintaining the top of the mail receptacle in an open position and at a fixed distance below the opening of the mail drop unit;

a second positioning structure establishing the bottom of the mail receptacle to a first position below the top of the mail receptacle when

empty and lowering the bottom of the mail receptacle to a second position as a function of the weight of the accumulated mail;

an enclosure on the work area side of the wall, the enclosure being hermetically coupled to the mail drop unit and hermetically sealed off from the work area, the enclosure containing the mail receptacle and comprising an opening sized to permit removal of the mail receptacle and a door hermetically sealing the opening when the door is closed;

a detector positioned inside the enclosure and generating a detection signal upon detection of airborne hazardous material; and

an indicator positioned outside the enclosure, coupled to the detector, and generating an indication upon receipt of the detection.

20. A mail collection point-of-use of claim 19 comprising:

a platform for supporting the bottom of the container; and

at least one vertical guide for providing a boundary for the platform as it moves.

21. A mail collection point-of-use of claim 19 comprising:

a fan for increasing the rate at which any airborne hazardous material reaches the detector; and

a control coupled to the detector for selectively deactivating the fan upon detection of airborne hazardous material.

22. The mail collection point-of-use of claim 19, wherein indicator comprises at least one light bulb for generating visible light upon receipt of the detection signal.

23. The mail collection point-of-use of claim 19, wherein the indicator comprises a buzzer for generating sound upon receipt of the detection signal.

24. The mail collection point-of-use of claim 19, wherein the indicator is positioned on an outside surface of the enclosure.

25. The mail collection point-of-use of claim 19 wherein the container comprises grommets; and

wherein the first positioning structure comprises parallel brackets comprising hooks engaging at least one of the grommets.

26. The mail collection point-of-use, at least partially positioned in a wall separating a customer accessible area from a non-customer-accessible work area, the mail collection point-of-use comprising:

a mail drop unit comprising an opening for receiving customer-deposited mail;

a mail receptacle for accumulating received customer-deposited mail; the mail receptacle comprising an expandable and collapsible container;

a positioning structure maintaining the top of the mail receptacle in an open position and at a fixed distance below the opening of the mail drop unit;

an enclosure on the work area side of the wall, the enclosure being sealingly coupled to the mail drop unit and sealed off from the work area, the enclosure containing the mail receptacle and comprising an opening sized to permit removal of the mail receptacle and a door sealing the opening when the door is closed;

a platform supporting the bottom of the mail receptacle;

a plurality of springs placed between the platform and the bottom of the enclosure, which elevate the platform to a position below the top of the mail receptacle when empty, and which lower the platform proportionally to the weight of mail accumulated in the mail receptacle;

a detector positioned inside the enclosure and generating a detection signal upon detection of airborne hazardous material; and

an indicator positioned outside the enclosure, coupled to the detector, and generating an indication upon receipt of the detection.

27. The mail collection point-of-use of claim 26 comprising:

at least one vertical guide providing a boundary for the mail receptacle as it expands and the platform as it moves.

28. The mail collection point-of-use of claim 26, wherein the platform is rectangular and the plurality of springs comprises four springs positioned at corners of the platform.

29. The mail collection point-of-use of claim 26, wherein the mail receptacle comprises grommets; and



wherein the positioning structure comprises a plurality of brackets comprising hooks engaging at least one of the grommets.

30. The mail collection point-of-use of claim 26, wherein the indicator comprises at least one light bulb for generating visible light upon receipt of the detection signal.

31. The mail collection point-of-use of claim 26, wherein the indicator comprises a buzzer for generating sound upon receipt of the detection signal.

32. The mail collection point-of-use of claim 26, wherein the indicator is positioned on an outside surface of the enclosure.

33. A mail collection point-of-use, at least partially positioned in a wall separating a customer accessible area from a non-customer-accessible work area, the mail collection point-of-use comprising:

a mail drop unit comprising an opening for receiving customer-deposited mail;

a mail receptacle for accumulating received customer-deposited mail; the mail receptacle comprising an expandable and collapsible container;

a positioning structure maintaining the top of the mail receptacle in an open position and at a fixed distance below the opening of the mail drop unit;

an enclosure on the work area side of the wall, the enclosure being sealingly coupled to the mail drop unit and sealed off from the work area, the enclosure containing the mail receptacle and comprising an opening sized to permit removal of the mail receptacle and a door sealing the opening when the door is closed;

a platform supporting the bottom of the mail receptacle;

a plurality of resilient cords, each cord attached at one end to the platform and the other end to the positioning structure, wherein the cords elevate the platform at a first position below the top of the mail receptacle when empty, and which are proportionally stretched by the weight of mail accumulated in the mail receptacle;

a detector positioned inside the enclosure and generating a detection signal upon detection of airborne hazardous material; and

an indicator positioned outside the enclosure, coupled to the detector, and generating an indication upon receipt of the detection.

34. The mail collection point-of-use of claim 33 comprising at least one vertical guide providing a boundary for the platform as it moves.

35. The mail collection point-of-use of claim 33, wherein the platform is rectangular and the plurality of cords comprises four cords attached to corners of the platform.

36. The mail collection point-of-use of claim 33, wherein the indicator comprises at least one light bulb for generating visible light when hazardous material is detected.

37. The mail collection point-of-use of claim 33, wherein the indicator comprises a buzzer for generating sound when hazardous material is detected.

38. The mail collection point-of-use of claim 33, wherein indicator is on an outside surface of the enclosure.

39. A mail collection point-of-use, at least partially positioned in a wall separating a customer accessible area from a non-customer-accessible work area, the mail collection point-of-use comprising:

- a mail drop unit comprising an opening for receiving customer-deposited mail;

- a mail receptacle for accumulating received customer-deposited mail; the mail receptacle comprising an expandable and collapsible container;

- means for maintaining the top of the mail receptacle in an open position and at a fixed distance below the opening of the mail drop unit;

- means for establishing the bottom of the mail receptacle at a first position below the top of the mail receptacle when empty and lowering the bottom of the mail receptacle as a function of the weight of the accumulated mail;

an enclosure on the work area side of the wall, the enclosure being sealingly coupled to the mail drop unit and sealed off from the work area, the enclosure containing the mail receptacle and comprising an opening sized to permit removal of the mail receptacle and a door hermetically sealing the opening when the door is closed;

a detector positioned inside the enclosure and generating a detection signal upon detection of airborne hazardous material; and

an indicator positioned outside the enclosure, coupled to the detector, and generating an indication upon receipt of the detection signal.

40. A mail collection point-of-use, at least partially positioned in a wall separating a customer-accessible area from a non-customer-accessible work area, the mail collection point-of-use comprising:

a mail drop unit comprising an opening for receiving customer-deposited mail;

a mail receptacle for accumulating received customer-deposited mail; the mail receptacle comprising a sack;

means for maintaining the top of the mail receptacle in an open position and at a fixed distance below the opening of the mail drop unit;

a platform, which supports the bottom of the sack;

means for establishing the bottom of the sack at a first position below the top of the sack when empty and lowering the bottom of the sack as a function of the weight of mail accumulated in the sack; and

at least one vertical guide for providing a boundary for the sack as it expands and the platform as it moves.

41. The mail collection point-of-use of claim 40, wherein:

the sack comprises grommets, and

the maintaining means comprises a plurality brackets comprising hooks engaging the grommets.

42. The mail collection point-of-use of claim 40, wherein:

the establishing means comprises a plurality of springs positioned between the platform and the floor of the work area.

43. The mail collection point-of-use of claim 42, wherein:

the platform is rectangular and the plurality of springs comprises four springs positioned near corners of the platform.

44. The mail collection point-of-use of claim 40, wherein:

the establishing means comprises a plurality of resilient cords, each cord attached at one end to the platform and at the other end to a corresponding one of the brackets.

45. The mail collection point-of-use of claim 44, wherein:

the platform is rectangular and the plurality of cords comprises four cords attached to corners of the platform.

46. The mail collection point-of-use of claim 40, wherein:

the sack comprises grommets;

the maintaining means comprises a plurality of brackets comprising hooks engaging at least one of the grommets; and

wherein the establishing means comprises plurality of springs positioned between the platform and the floor of the work area.

47. The mail collection point-of-use of claim 40 wherein:

the sack comprises grommets;

the maintaining means comprises a plurality of brackets comprising hooks engaging at least one of the grommets; and

the establishing means comprises a plurality of resilient cords, each cord attached at one end to the platform and at the other end to a corresponding one of the brackets.

48. A method of preventing detected hazardous materials within a mail collection point-of-use from contaminating components of subsequent mail delivery system processes, the method comprising:

receiving customer-deposited mail through an opening in a mail drop unit;

accumulating received mail in a mail receptacle contained in an enclosure;

examining air within the enclosure for airborne hazardous material;  
generating a detection signal if hazardous material is detected; and  
indicating the detection of hazardous material.

49. The method of claim 48 comprising isolating accumulated mail and the surrounding air in the enclosure from a non-customer-accessible work area containing the enclosure.

50. The method of claim 48 comprising facilitating airflow within the enclosure until a detection signal is generated.

51. The method of claim 48, wherein the method of indicating the detection of hazardous material comprises illuminating a visible light source or generating an audible sound.

52. The method of claim 48 comprising reducing the distance received customer-deposited mail falls before landing in an empty mail receptacle.